CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-06-20-06** **Date: 21-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-06-17
Sample ID No	:	2017-06-20-06-01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	20-06-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**53**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

Note:
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-06-19-02** **Date: 22-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-06-17
Sample ID No	:	2017-06-19-02-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	19-06-17
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

Note:
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-06-19-02** **Date: 21-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-06-17
Sample ID No	:	2017-06-19-02-01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	19-06-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

Note:-
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 1/1
End of Report

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-06-19-02** **Date: 21-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-06-17
Sample ID No	:	2017-06-19-02-01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	19-06-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.1%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.5%	
Combined Flakiness and Elongation Index for WMM	23.6%	

Note:-
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

CIVIL PRO
AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR SDBC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-06-26-01**	**Date: 28-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.	
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.	
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	26-06-17	
Sample ID No	:	2017-06-26-01-01	
Type of Mix	:	SDBC-Plant (Semi Dense Bituminous Concrete)	
Date of test	:	26-06-17	
Weight of Sample	:	5000	Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-
13.2	0	0	0	100	100
9.5	410	410	8.20	91.80	90-100
4.75	2187	2597	51.94	48.06	35-51
2.36	1038	3635	72.70	27.30	24-39
1.18	525	4160	83.20	16.80	15-30
0.3	503	4663	93.26	6.74	9-19
0.075	169	4832	96.64	3.36	3-8
PAN	168	5000	100.00	0.00	0

Note:-

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 1/1
End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR SEMI DENSE BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2017-06-26-01** **Date: 29-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-06-17
Sample ID No	:	2017-06-26-01-01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-06-17

Physical Requirements fo Coarse Aggregate for Semi Dense Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.1	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	9.5		
Strength	Aggregate Impact Value	21.8	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.31	Maximum 2%	IS:2386 Part III

Note:
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

CIVIL PRO BANGALORE Sig..... Date.....

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quallity Manager

End of Report

CIVIL PRO
AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2017-06-26-01**	**Date: 29-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.	
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.	
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	26-06-17	
Sample ID No	:	2017-06-26-01-01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	26-06-17	

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.0	1.0	98.8	Minimum Retained Coating 95%
2	98.5	1.5		
3	99.0	1.0		

Note:
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-06-26-01** **Date: 29-06-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	26-06-17
Sample ID No	:	2017-06-26-01-01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-06-17

The results of the tests conducted on the Semi Dense Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.54	10.11	8.2KN(min)
2	Marshal flow at 60°C, mm	3.22	3.29	2-4
3	Percent air Voids	4.59	4.25	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.88	13.94	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.32	70.0	65-75
6	Density, g/cc	2.26	2.24	–

Note:-

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST RESULTS OF GRADATION FOR SDBC
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2017-07-19-02**	**Date: 20-07-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at RK Hegadenagara in Ward No.06, Byatarayanapura Sub Division.	
Agency	:	Sri.R.Nataraj, Contractor, #860, 19th Cross, 5th Block, HMT Layout, Vidyaranyapura, Bangalore-97.	
Customer Reference	:	EE/BTP/BBMP/E-PMT/68/2014-15	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	19-07-17	
Sample ID No	:	2017-07-19-02-01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	19-07-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	502	501
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.98	4.99
4	Average percentage	%	5.0	

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Lab ID : CP-RW-2017-07-19-02 **Date: 20-07-17**

Sample ID No : 2017-07-19-02-01

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	31	31	6.50	93.5	90-100
4.75	213	244	51.15	48.8	35-51
2.36	63	307	64.36	35.6	24-39
1.18	39	346	72.54	27.5	15-30
0.3	71	417	87.42	12.6	9-19
0.075	34	451	94.55	5.5	3-8
PAN	26	477	100.00	0.0	0

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	29	29	6.09	93.9	90-100
4.75	215	244	51.26	48.7	35-51
2.36	62	306	64.29	35.7	24-39
1.18	41	347	72.90	27.1	15-30
0.3	66	413	86.76	13.2	9-19
0.075	32	445	93.49	6.5	3-8
PAN	31	476	100.00	0.0	0

Note:-

The results pertain to the samples received and tested.
All information furnished by the Customer/ Representative.
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

End of Report